

Add. 3		Course program for the first, second and third level (cycle) of studies			
1.	Course title	Sustainable Management of Water Resources			
2.	Code	238			
3.	Study group(s)	HEWM, EE			
4.	The organizer of the study program (unit, institute, department)	Faculty of Mechanical Engineering - Skopje, Ss. Cyril and Methodius University in Skopje			
5.	Level (first, second, third)	First			
6.	Academic year / semester	Summer	7.	ECTS credits	6
8.	Instructor	Ana Lazarevska, Asst. Prof. D.Sc.			
9.	Prerequisites	Mathematics 1,2 – passed Fluid Mechanics – signature			
10.	<p>Course objectives (competences):</p> <p>Introduction to sustainability and sustainable development (SD). Introduction to the decision making theory and its methods and techniques as tools for modeling sustainable management of water resources.</p> <p>Defining sustainability applied to assessment of projects, policies and strategies relating to management of water resources. Understanding the key concepts of the integrated management of water resources. Understanding the influence of the cultural, economic, politic, organizational and institutional factors and their combinations essential to generating sustainable strategies, policies and projects.</p>				
11.	<p>Course content:</p> <p>Theory of assessing sustainability and sustainable development: basic concepts, key factor and indicators. Defining models for assessing sustainability utilizing the methods and techniques for assessing the contribution to sustainable development.</p> <p>Decision Making Theory: Practical application of the methods and techniques for designing models for sustainable management of water resources.</p> <p>Understanding the concepts and importance of the water resources and their proper management for optimal use. Understanding the key concepts of the integrated management of the water resources and related risk assessment.</p> <p>Basic concepts of environmental impact assessment and analysis of the policies and activities which have to be taken by the relevant stakeholders towards sustainable management of water resources.</p>				
12.	Study methods: interactive lectures, auditory practice and/or laboratory practice, self running and/or team work projects, self learning.				
13.	Total hours	6 ECTS x 30 hours = 180 hours			
14.	Hours allocation per activity:	30 + 30 + 60 + 20 + 40 = 180 hours			
15.	Lectures/Lab	15.1.	Lectures	30 hours	
		15.2.	Lab (student work)	30 hours	
16.	Project Work/Assignments	16.1.	Project assignments	60 hours	
		16.2.	Individual assignments	20 hours	
		16.3.	Self-study	40 hours	
17.	Points/Marks:				
	17.1.	Tests			40 points
	17.2.	Projects			40 points
	17.3.	Homework			10 points
	17.4.	Attendance			10 points
18.	Grading scale	Under 50		5 (five) (F)	
		51 - 60 points		6 (six) (E)	
		61 - 70 points		7 (seven) (D)	
		71 - 80 points		8 (eight) (C)	

		81 - 90 points	9 (nine) (B)
		91 - 100 points	10 (ten) (A)
19.	Prerequisites for taking the final exam	Accomplished 17.1, 17.2, 17.3, 17.4	
20.	Language of Instruction	Macedonian	
21.	Course evaluation	Student questionnaire	

22.	Textbooks				
	Instruction materials				
	No.	Author	Title	Publisher	Year
	1.	S. Bell, S. Morse	Sustainability Indicators: Measuring the immeasurable	EarthScan Publications. Ltd.	2000
	2.	United Nations Commission for Sustainable Development (UN CSD)	<a href="http://www.un.org/esa/dsd/index.shtml?utm_source=OldRedirect&amp;utm_medium=redirect&amp;utm_content=dsd&amp;utm_campaign=OldRedirect">http://www.un.org/esa/dsd/index.shtml?utm_source=OldRedirect&amp;utm_medium=redirect&amp;utm_content=dsd&amp;utm_campaign=OldRedirect</a>		
22.1.	3.	Organisation of Economic Co-operation and Development (OECD)	"Core Set of Indicators for Environmental Performance Reviews". A synthesis report by the Group on the State of the Environment. Paris: 39.		1993
	4	P. Taylor, E. Gabrielli, J. Holmberg	Economics in Sustainable Water Management, Training Manual and Facilitators' Guide	Cap-Net, UNDP	2008
	Supplemental Instruction Materials				
	No.	Author	Title	Publisher	Year
22.2.	1	Обединети нации (ОН)	UN online EIA course ( <a href="http://eia.unu.edu./index.html">http://eia.unu.edu./index.html</a> )	ОН	
	2	T.E. Graedel, B. R. Allenby	Industrial Ecology	Pearson Education Inc.	2003
	3	T. Taylor, R. Goldstein	Sustainable Water Resource Management	Electric Power Research Institute, Inc.	2009